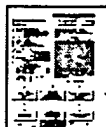
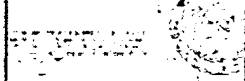


**Patent Plaques**

P3176478A2: NEW DIKETOPIPERAZINE DERIVATIVE AND IMMUNOSUPPRESSIVE AGENT CONTAINING THE SAME AS ACTIVE INGREDIENT

[View Images \(1 pages\)](#) | [View INPADOC only](#)**Country:** JP Japan**Kind:****Inventor(s):** KAWAGUCHI NOBORU
KOYAMA TADAYOSHI
SEYA MOTOHIDE
WASHIDA NAOHIRO
NIWANO MITSURU**Applicant(s):** SNOW BRAND MILK PROD CO LTD
[News, Profiles, Stocks and More about this company](#)**Issued/Filed Dates:** July 31, 1991 / Dec. 5, 1989**Application Number:** JP1989000315752**IPC Class:** C07D 241/38; A61K 31/495; C07D 403/06;

Abstract: NEW MATERIAL: A compound expressed by formula I [R is residue R of amino acid expressed by the formula $R.CH(NH_2)COOH$; R, together with formula II, may be form formula III]. EXAMPLE: Cyclopentane-3-spiro-6-methyl-piperazine-2,5-dione expressed by formula IV. USE: An immunosuppressive agent. PREPARATION: Cycloleucine expressed by formula V is made to react with a mixture solution of benzyl alcohol, p-toluenesulfonic acid and toluene while being heated and refluxed and then crystallized in an ether to provide a cycloleucine benzyl ester p-toluenesulfonate expressed by formula VI, which is subsequently subjected to a reaction with an amino acid expressed by formula VII in which the amino group is protected with tert-butyloxycarbonyl group in N-methylmorpholine, etc., to afford a compound expressed by formula VIII. The resultant compound expressed by formula VIII is then dissolved in hydrochloric acid-dioxane and the reaction solution is evaporated to dryness. The obtained solid is subsequently dissolved in a solvent and N-methylmorpholine is then added thereto. The reaction mixture is refluxed while being heated.

COPYRIGHT: (C)1991,JPO&Japio

Other Abstract Info: DERABS C91-269855 DERC91-269855**Foreign References:** (No patents reference this one)

Nominate this
invention
for the Gallery...

Alternative
Searches



Patent Number



Boolean Text



Advanced Text

Browse



U.S. Class
by title



U.S. Class
by number



IBM Technical
Disclosure Bulletin

[Privacy](#) | [Legal](#) | [IBM](#) | [Gallery](#) | [IP Pages](#) | [Advertising](#) | [FAQ](#) | [Contact Us](#)